REMARKS

The Office Action mailed September 10, 2003 has been reviewed and carefully considered. Claim 17 has been added. Claims 1-17 are pending in this application, claims 1-12 having been withdrawn from consideration, the independent claims being 1 and 13. Claims 13-16 have been amended. Reconsideration of the above-identified application, as amended and in view of the following remarks, is respectfully requested.

Claims 13-16 stand rejected under 35 U.S.C. 112, second paragraph, as indefinite. Appropriate correction has been made, and the basis for the rejection is believed to have been overcome.

Claims 13 and 14 stand rejected under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 4,578,098 to Paek.

Claim 13 as amended recites:

> an upper gas feeding section over said main body, wherein said upper gas feeding section includes a first hollow rotary body having at least one radial passageway for gas; and external means for supplying the gas for flow through the passageway, said apparatus being configured to continuously rotate either said external means or said rotary body to cause non-uniform delivery of the gas to the fiber to create a temperature difference to reduce polarization mode dispersion of the fiber

Support for the amendment of claim 13 is found in the specification (e.g., FIGs. 2 and 3; page 8, line 21 – page 9, line 10; page 9, line 21 to page 10, line 8).

As per the discussion below, the Paek reference fails to anticipate claim 13 in its pre-amended form, i.e. as originally filed, and as now amended.

Paek fails to disclose, or even to suggest, "an upper gas feeding section over

said main body" as explicitly required by the language of claim 13, and fails to anticipate claim 13 for at least this reason.

Page 3 of the Office Action suggests that the "main body" of claim 13 corresponds to the portion of the Paek optical fiber 14 disposed below the furnace, i.e. what is enclosed by the copper shell 24.

However, since claim 13 is directed to an "apparatus for cooling an optical fiber," what then in Paek corresponds to the "optical fiber" explicitly mentioned in claim 13? Presumably, the "optical fiber" of claim 13 is the Paek optical fiber 14, in which case it is unclear how the "main body" in claim 13 could also properly be deemed to correspond to the Paek optical fiber 14.

Attempting to ignore the claim term "optical fiber" is no solution. The claim 13 limitation "the longitudinal direction of the fiber," which is meaningful to one of ordinary skill in the art, cannot be ignored in any valid application of prior art to the claim. At least for this reason, the claim term "fiber" cannot be ignored.

Each and every claim limitation must be disclosed by the reference for anticipation. In particular, Paek fails to disclose "a main body . . .; an upper gas feeding section over said main body" as explicitly required by the language of claim 13, and fails to anticipate the invention as recited in claim 13 for at least this reason.

In addition, Paek fails to disclose or suggest "said apparatus being configured to continuously rotate . . . to cause non-uniform delivery of the gas to the fiber to create a temperature difference to reduce polarization mode dispersion of the fiber" as explicitly required by the language of claim 13 as amended.

Paek is directed to an apparatus for controlling the tension applied to the fiber as it is being drawn into shape from the melting preform. A rotary sleeve is provided around a tube through which the fiber is drawn. The sleeve has openings or slits 40 that lead radially from the outside to the inside of the sleeve, each slit running longitudinally down the sleeve. The tube has similar openings 34. A design feature of the apparatus is that the misalignment of the sleeve opening 40 with tube opening 34, adjustable by revolving the rotary sleeve, can be varied to change the amount of air flowing into tube 32. The misalignment is normally set so as to limit the gas turbulence to a desired level, so as to avoid the creation of fiber diameter variations. The amount of misalignment also regulates the drawing tension on the fiber. Paek regulates the drawing tension to create a fiber with "acceptable transmission losses and strength characteristics" (col. 1, lines 28-29).

Unlike the present invention as recited in claim 13, Paek is not "configured to continuously rotate . . . to cause non-uniform delivery of the gas to the fiber to create a temperature difference to reduce polarization mode dispersion of the fiber."

For this reason too, Paek fails to anticipate or render obvious the invention as recited in claim 13.

Claim 14 depends indirectly from claim 13 and therefore is deemed to be patentable over Paek for at least the same reasons.

Moreover, claim 14 depends directly from new claim 17 which further distinguishes over Paek. Support for new claim 17 is found in the specification (e.g., FIG. 4 and accompanying text). New claim 17 recites, referring to the "hollow rotary body,"

"wherein said rotary body has . . . at least one slit in said inner surface along the longitudinal direction of the optical fiber."

Page 3 of the Office Action suggests that the Paek opening 40 in sleeve 36 corresponds to the "slit in said inner surface" of the "hollow rotary body" of claim 13. To the contrary, however, the opening 40 extends entirely and radially through the sleeve 36, and cannot properly be characterized as a slit in the sleeve surface. For this reason too, Paek fails to anticipate the invention as recited in claims 14 and 17.

Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 13-14 stand rejected under 35 U.S.C. 103(a) as unpatentable over Paek.

As has been demonstrated above, there is no suggestion in Paek or in what was know to those of ordinary skill in the art to modify Paek so as to create an embodiment that reads on claim 13 or 14. Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 13 and 15-16 stand rejected under 35 U.S.C. 103(a) as unpatentable over a common threaded nut.

Claim 13 explicitly recites "An apparatus for cooling an optical fiber . . .comprising . . . an upper gas feeding section" and therefore cannot be anticipated as is being suggested for at least this reason.

Claims 15-16 have, like claim 14, been amended for dependency in view of the fact that some former limitations of claim 13 have now been extracted and used in drafting new dependent claim 17, from which claims 14-16 now depend.

Due, at least to their dependency from claim 13, claims 15 and 16 are likewise deemed to be patentable over Paek.

Reconsideration and withdrawal of the rejection is respectfully requested.

In view of the foregoing remarks, it is believed that this application is now in condition for allowance. The Examiner is invited to contact the undersigned in the event of any perceived outstanding issues so that passage of the case to issue can be effected without the need for a further Office Action.

In the event that any additional fee is required to continue the prosecution of this Application as requested, please charge such fee to Deposit Account No. 502-470.

Respectfully submitted,

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